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NOTES ON TWO ADDITIONAL CASES OF THYROIDECTOMY FOR GRAVES'S DISEASE.

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SINCE my former paper was written (see this JOURNAL, December, 1893), two cases have come to my notice which are of considerable importance with regard to some of the points already discussed, especially as indicating the dangers attending the early days after operation, and the possibility of a relapse after a long interval of comparative health. The later history of the case already reported is also of interest.

The first case is that of a young girl, sixteen years old, who presented herself in the autumn of 1893 at the Out-Patient-Department of the Massachusetts General Hospital. She had been sick for four years, and showed the signs and symptoms of Graves's disease in a typical form,—goitre, exophthalmus, tachycardia, tremor, suffusion of the face, mental irritability. An intermittent swelling of the thyroid had been the first symptom, but after an attack of scarlet fever the enlargement became permanent and the other symptoms appeared. She had already had the advantage of hospital treatment in another city, and had made external applications of iodine for a long time without effect, but in order to give a thorough trial to rest and other measures, admission was obtained for her at the excellent private hospital of the Good Samaritan, with the opportunity of attending daily at the Massachusetts General Hospital for electrical treatment.

After three months of this treatment she entered the wards of the Massachusetts General Hospital for operation, and the following notes are taken from the surgical records.

At her entrance, her temperature was 100.2° F.; pulse 140; respiration 28; the appetite and digestion were in good order; general nutrition good. Nausea was said to be present frequently in the morning; and there had been no catamenia for four months. In the anterior

cervical region a tumor was seen lying on both sides of the median line, but more prominent on the right side than on the left; a slight groove separated the two lobes. Both lobes were carefully measured. The tumor was soft to the touch except for a few harder portions. A distinct thrill was felt on palpation, synchronously with the heart-beat and a systolic blowing murmur was heard with the stethoscope. The tumor moved up and down with the trachea when the patient swallowed. The heart-sounds were normal, and the respiration substantially normal. Nothing abnormal was found in the abdomen. The pulse was regular, of fair strength and volume.

The operation was done on February 2, 1894, by Dr. J. C. Warren, with whose permission these notes are published. An incision five inches long was made on the right side of the neck over the tumor and parallel with the anterior border. The tumor was found to be covered with large veins. The upper border was freed by a blunt dissector and the knife. The superior thyroid artery was tied and cut. The dissection was then continued downward alternately on the two sides of the tumor, bleeding points being seized with the hæmostatic forceps. The under border was then freed, and finally the posterior surface. A ligature was placed around the isthmus of the tumor and the right half removed. There was only a moderate amount of bleeding, and this was almost entirely from the veins on the posterior surface of the tumor.

The bleeding points were tied with silk. There was a troublesome oozing from the surface of the wound, which was finally controlled by pressure and ligatures. The wound was sewed up with interrupted worm-gut sutures, a small gauze wick being left in, about an inch from the lower angle. A dry dressing was put on, which was held in place by special nurses during the recovery from the ether, and bandaged on during the evening of the same day. The patient made a good recovery from the ether. During the recovery from the ether and on the following day the patient was somewhat nervous and excited, calling frequently for the nurses and wanting to get out of bed. She had a slight cough, but no dyspnoea.

February 6th. Gauze removed. The wound looked in perfect condition, and the dressing was not stained through. Skin clean and dry and without redness.

February 7th. Patient doing well; much more quiet; vomited three times during the night.

February 8th. Doing well except for vomiting and restlessness. Last night was given trional, gr. XV.; a sub-cutaneous injection of morphia, gr. $\frac{1}{8}$ with gr. $\frac{1}{100}$ of hydro-bromate of hyoscine; some retching, but no vomiting during the night. Nutritive enema ordered to be given every four hours, and champagne and ice by the stomach. Very little food has been retained in the stomach since the operation. Patient complains of hunger. Wound looks perfectly healthy.

February 9th. Very restless during the early part of the night. Nutritive enema at ten o'clock and again at two o'clock; both rejected.

At ten minutes past two in the morning the patient was reported for restlessness. She was tossing about in the bed, not delirious, but talking irrationally; skin warm and sweating; she coughed somewhat and raised a little loose mucus; coarse tracheal rales were heard; the pulse (which had been much more rapid since the operation than before) was 165, but of fair strength. An injection of sulphate of morphine gr. $\frac{1}{8}$ with gr. $\frac{1}{100}$ of hydro-bromate of hyoscine, which had apparently worked well the night before, was given at twenty minutes past two. After this she slept for two hours. At 5 A.M., the night superintendent of nurses felt her pulse, but noted no change. At five minutes past five the night nurse found the pulse very rapid and weak, and immediately reported the fact. Five minutes later, before the house surgeon could reach her, she had died.

An examination of the pulse and temperature record gives the following facts: The temperature during the five days preceding the operation had ranged from 98° and 100.3°, the curve being very irregular; the pulse had ranged between 110 and 140. On the morning of the operation the temperature was 98.6°; pulse 118. On the night of the operation the temperature had gone up to 102.6°. It had fallen by the morning to 99.5°, but rose again slightly toward night.

The following morning, the second day after the operation, the temperature was 98.4° and at night 98.5°. On the morning of February 8th, the day before her death, the temperature was 100.7° and the evening temperature was the same. At the time of her death, at three o'clock in the morning, it had risen to 105.2°. The pulse rose after the operation to 145 and the next day to

164, and never fell below 155 after this time. Three hours before her death it was 165.

In view of the possibility that the hydro-bromate of hyoscine acted unfavorably on the heart it is worth noting that both pulse and temperature were quite high on the morning of the day before the patient's death. The evening and morning temperature of that day were the same, 100.7°. The pulse had fallen slightly during the course of the day.

The second case is that of a young woman, 20 years of age, recently referred to me by Dr. Lindström, who was operated on about two years ago by Dr. Lossander, of Stockholm. The first symptoms had made their appearance nearly a year previously, and two months after a nervous shock. In other respect the patient had been well and strong. The goitre was the first symptom, but at the time of the operation most of the classical signs and symptoms of Graves's disease were present. The final effect of the operation seems to have been excellent, and the patient remained able to work until three weeks ago, when she began to feel short of breath in going over the stairs, and a great deal of palpitation on exertion, without known cause. The thyroid has also of late increased in size.

At the time of my examination the pulse was 120; the eyes slightly prominent, though not so much so, she says, as before the operation; a jerky tremor of the hands was also present.

Her dyspnoea and palpitation have not been benefited by a several weeks' treatment of belladonna and iron.

Besides affording this history of a relapse, this case is interesting on account of the symptoms during the few days immediately following the operation, which were developed by closely questioning the patient. She recalls having been very sick with fever, pain in the chest, nausea and vomiting, so that she was not able to take anything for a day or two but water and ice. She stayed in the hospital at Stockholm for four weeks and then attended as an out-patient for three weeks more, and afterwards, at longer intervals, to have her wounds dressed. Five weeks later she was again obliged to enter the hospital because her heart troubled her so much, and there she stayed six weeks. Three weeks after leaving the hospital for the second time she improved so much that she was able to go to work.

From the history of these three cases which I have observed, the belief has forced itself upon my mind that the danger of thyroidectomy in Graves's disease is greater than the reports hitherto published would seem to indicate. *La Semaine Médicale*, for January, 1894, contains an interesting paper by Dr. Lancereaux on rapid and sudden death due to disturbance of the nervous system, in the course of which he speaks of several cases of heart failure due to disturbance of the nervous system, and comments on the great value of morphine in counteracting the influences at work. This is of special interest in view of the observations published within this past year on the use of chloroform in the collapse of acute insolation, the action of the remedy in both cases being attributable to the production of a sort of anæsthesia of the cardiac centres, which prevents them from suffering under the toxic influences at work. In one of Lancereaux's cases the temperature rose rapidly just before death, as in the case here reported.

In view of the practical interest of the subject, a few words on the case reported in my earlier paper may be in place.

As regards general strength, the patient considers herself better, her appearance is somewhat more natural and her manner less agitated.

On the other hand, the pulse-rate still ranges in the neighborhood of 130, and the exophthalmus is but little less than before the operation. The jerky tremor is still present in slight degree, though much less marked than formerly.

The stump of the goitre, which had been growing smaller until of late, is now again increasing in size.

The patient is able to do a moderate amount of light work, but is far from strong. The voice is clear, but rather weak, and the paralysis of one vocal cord still persists unchanged, the other cord having to cross the median line in phonation.

I would again call attention to the possibility that some of these symptoms of the early days of operation may be due to poisoning from thyroid secretions. This idea suggested itself to Dr. J. C. Warren and myself in connection with the case reported in the former paper, because at the time she was so very sick, with a temperature of 106° and a pulse of 200, and yet a perfectly aseptic wound, a small quantity of gelatinous se-

cretion was found upon the dressing, having oozed from the cut.

In talking about this case with Dr. Warren, he told me that he had put a ligature strongly about the isthmus of the gland before cutting off the right half, and he suggested that in this way an unusual quantity of the secretion might have been squeezed out. Possibly this explanation would account in part for the fact that these serious symptoms are not always met with after thyroidectomy. It is probable that they are more common in cases of Graves's disease than of ordinary goitre, on account of the excessive irritable weakness of the nervous system, especially as regards the cardiac centres. A certain amount of this nervous irritability is seen even in cases of ordinary goitre. In one case of this sort, where thyroidectomy was performed by Dr. Warren, a high degree of tachycardia came on before the operation and lasted for some days, without being attended by other bad symptoms. Similar attacks had occurred occasionally before the operation was performed.

A recent paper by Rehn, who was one of the pioneers in the surgical treatment of Graves's disease, reports encouraging results on the whole, but also gives the record of four fatal cases. Rehn thinks that where the cardiac changes, or the nervous excitability of the heart has assumed considerable proportions, the danger of operation is considerably increased.